

Remarks

DETAILED ACTION

Claim Rejections - 35 USC § 102

Claims 1-4, 11, and 14-15 stand as rejected under 35 U.S.C.102(b) as being anticipated by THOMPSON ET AL (US 4129455), hereafter referred to as THOMPSON.

It is the Examiner's position that THOMPSON discloses a composition comprising a first component having the general formula recited in the instant application, specifically, diazabicyclooctane (or, more formally, 1,4-diazabicyclo [2.2.2] octane) and a second component comprising a nucleophilic acceptor, specifically, toluene diisocyanate. The Examiner notes that with respect to claims 2-4, the first component is 1 ,4-diazabicyclo[2.2.2]octane and the second component is an isocyanate; and that with respect to claims 11 and 14-15, THOMPSON discloses a solvent, specifically dipropylene glycol.

Claim 1 has been amended to include a component of a sour hydrocarbon. Thompson is directed toward creating a dispersion of copolymers (for inks, etc.), and in some embodiments, that dispersion is in hydrocarbons, but not sour hydrocarbons. Since Thompson does not disclose the components of the newly amended claim 1, it and all of its dependent claims, (1-15) are not anticipated by Thompson and thus in condition for allowance under §102.

Claims 1-14, 16, and 23-25 stand as rejected under 35 U.S.C. 103(a) as being unpatentable over PETTY (US2927946) in view of DOBINSON ET AL (US 3707552), hereafter referred to as PETTY and DOBINSON, respectively.

With respect to claims 1-6, it is the Examiner's position that PETTY discloses a composition useful for reducing the concentration of mercaptans in hydrocarbons comprising a nucleophilic acceptor such as an epoxide as required in claims 4-6 of the instant application. The Examiner concedes that PETTY does not appear to explicitly disclose the first component according to the instant application as required in claim 1. The Examiner cites DOBINSON,

which he states is concerned with the reaction between mercaptan groups and 1,2-epoxides, as disclosing the use of a tertiary amine according to the formula of the first component of the instant application, specifically, 1,4-diazabicyclo[2.2.2]octane (aka triethylene diamine OR DABCO) as required in claims 2 and 3, which is preferably used as a catalyst for the formation of thio ethers from reactants comprising mercaptans and 1,2-epoxides.

The Examiner concludes that, at the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the composition of PETTY with the tertiary amine of DOBINSON in order to prevent epoxide reaction with the phenols thereby creating undesired products as well as to accelerate the rate of reaction, especially with regard to the reaction of epoxides with aliphatic mercaptans as disclosed by DOBINSON in view of PETTY. Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

The Applicants respectfully traverse the Examiner's rejection. The Examiner's attention is directed to paragraph 0026. The inventors, who hardly qualify as "ones of ordinary skill in the art," made a guess regarding the mechanism of how the subject invention works, and even then offered the proviso that it was made without limitation and that it was merely believed. The examiner has accepted the "after the fact guess" of the inventors and then looked to the whole of general chemistry to find some reference which supports that theory and then has attributed this to the skill level of one of ordinary skill in the art of treating sour hydrocarbons. One of ordinary skill in the art of treating sour hydrocarbons, especially sour crude oil, does not possess a PhD in Chemistry and resort to papers on the production of thio-esters for use in as curing agent in sealants and caulking compounds.

And make no mistake, Dobson is directed to exactly that, the production of compositions for use in sealants and caulking. At the Examiner's cite of column 6, lines 9&10, there is a list of 7 different accelerators for use as SECONDARY accelerators for use with caulking compositions. Of these secondary accelerators, the most preferred are a tertiary amine or an alkali-modified clay. There is nothing in the Dobson reference at this point that would motivate one of ordinary skill to combine Dobson with Petty.

Further, the Examiner's second citation from the Dobson reference does not even disclose the use of the claimed compounds, except to reference tertiary amines. Dobson, at column 6, lines 62-69 reads:

The reaction between the mercaptan groups and 1,2-epoxide groups may be accelerated by a catalyst. Typical catalysts are alkali metal hydroxides, boron trifluoride complexes, and aluminium, zinc and lead octoates and naphthenates, but the preferred catalysts are tertiary amines such as 2,4,6-tris(dimethylaminomethyl) phenol, triethanolamine, or N-benzyl dimethylamine.

It does not even list 1,4 - diazabicyclo [2.2.2] octane. Since one of ordinary skill in the art would not have been motivated to mine Dobson for the claimed tertiary amine, and then back integrate it into the disclosure of the Perry, Claims 1, 16, and 23; all of the independent claims of the present application are not obvious in view of Perry and Dobson. It also follows that if the independent claims are not obvious, then the dependent claims are also not obvious.

CONCLUSION

For all the foregoing reasons, Applicants submit that the application is in a condition for allowance and such an action is requested. A separate request for an extension of time accompanies this response. The Commissioner is authorized to charge any under payment or credit any overpayment to Deposit Account No. 50-4920.

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Respectfully submitted,

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